



## Motorcyclists' Attitudes About Using High-Visibility Gear to Improve Conspicuity: Findings From a Focus Group Study

High-visibility (“Hi-Viz”) motorcycle gear is more visible to the human eye than regular gear. The retroreflective or fluorescent properties, or brightly colored material of Hi-Viz gear can increase the conspicuity of the motorcyclist to other motorists. The conspicuity of motorcycles is relevant to highway safety, as traffic studies show that crashes between motorcycles and other vehicles, particularly at intersections, often involve a driver who did not see the motorcycle, or misjudged its distance and speed. Hi-Viz gear appears to mitigate some of this risk. In one study, drivers were less likely to pull in front of motorcycles when the riders wore Hi-Viz apparel than when riders wore regular apparel.<sup>1</sup> A case-control study found that motorcyclists who wore Hi-Viz apparel and/or white helmets were less frequently represented in crashes.<sup>2</sup> Even in daytime, Hi-Viz gear may impart safety benefits: One study found that motorcyclists wearing fluorescent gear reported having fewer crashes or near-misses than those not wearing fluorescent gear.<sup>3</sup>

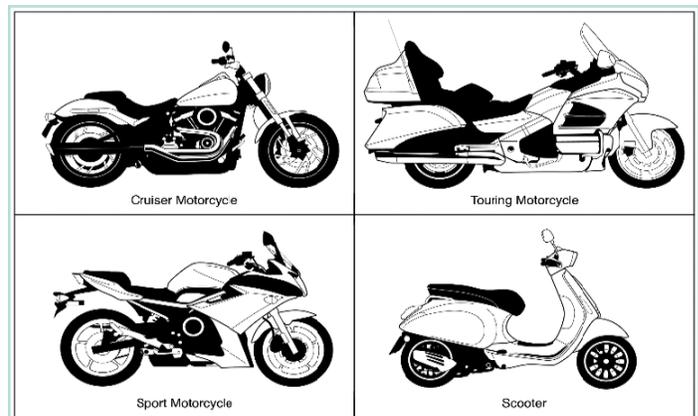
### Research Questions

To understand the attitudes and beliefs of motorcyclists regarding Hi-Viz, NHTSA conducted focus groups with motorcycle operators and passengers. This topic is important to State Highway Safety Offices, motorcycle safety advocates, and NHTSA, as reducing the number of motorcycle crashes and fatalities is a traffic safety priority.

The study addressed the following questions.

- What were the motorcyclists’ beliefs about the role of conspicuity in safety?
- Why were some motorcyclists unwilling to use Hi-Viz gear?
- Were some groups of motorcyclists more willing to use Hi-Viz gear than others?

**Figure 1. The Focus Groups Consisted of Operators and Passengers of Cruiser, Touring, and Sport Motorcycles, and Scooters**



### Method

Motorcycle operators and passengers who rode cruiser, touring, sport motorcycles, and scooters participated in focus groups across the country. Figure 1 illustrates these types of motorcycles.

There were 18 focus groups with 137 motorcyclists. Most groups had 8 to 10 people except for the scooter group (7 operators) and the passenger group (5 passengers). Most groups included motorcyclists who rode the same motorcycle type and were the same gender. Due to difficulties recruiting women and scooter operators, the all-women groups included women operators of any motorcycle type, and the scooter group included men and women. The groups were conducted

<sup>1</sup> Olson, P. L., Halstead-Nussloch, R., & Sivak, M. (1981). The effect of improvements in motorcycle/motorcyclist conspicuity on driver behavior. *Human Factors*, 23(2), 237-248.

<sup>2</sup> Wells, S., Mullin, B., Norton, R., Langley, J., Connor, J., Lay-Yee, R., & Jackson, R. (2004). Motorcycle rider conspicuity and crash related injury: case-control study. *The BMJ* 328:857-860. [Originally called the *British Medical Journal*, the title changed to *The BMJ* in 2014.]

<sup>3</sup> Fulton, E. J., Kirkby, C., & Stroud, P. G. (1980). Daytime motorcycle conspicuity (Supplementary Report 625). Wokingham, UK: Department of Transport, Transport and Road Research Laboratory. [Now just Transport Research Laboratory.]

in California, Maryland, Michigan, and Texas. Table 1 breaks out the focus groups by type and location. Participants discussed preferences for motorcycle gear, beliefs about conspicuity, and attitudes about safety.

**Table 1. Focus Groups by Type and Location**

California (Los Angeles)	Michigan (Ann Arbor)
<ul style="list-style-type: none"> <li>• Men Riders:               <ul style="list-style-type: none"> <li>– Cruiser/Standard</li> <li>– Touring</li> <li>– Sport</li> </ul> </li> <li>• Women Riders:               <ul style="list-style-type: none"> <li>– Mixed Motorcycle Types</li> </ul> </li> <li>• Men &amp; Women Riders:               <ul style="list-style-type: none"> <li>– Scooters</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Men Riders:               <ul style="list-style-type: none"> <li>– Cruiser/Standard</li> <li>– Touring</li> <li>– Sport</li> </ul> </li> <li>• Women Riders:               <ul style="list-style-type: none"> <li>– Mixed Motorcycle Types</li> </ul> </li> </ul>
Maryland (Rockville)	Texas (Austin)
<ul style="list-style-type: none"> <li>• Men Riders:               <ul style="list-style-type: none"> <li>– Cruiser/Standard</li> <li>– Touring</li> <li>– Sport</li> </ul> </li> <li>• Women Riders:               <ul style="list-style-type: none"> <li>– Mixed Motorcycle Types</li> </ul> </li> <li>• Women Passengers:               <ul style="list-style-type: none"> <li>– Mixed Motorcycle Types</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Men Riders:               <ul style="list-style-type: none"> <li>– Cruiser/Standard</li> <li>– Touring</li> <li>– Sport</li> </ul> </li> <li>• Women Riders:               <ul style="list-style-type: none"> <li>– Mixed Motorcycle Types</li> </ul> </li> </ul>

## Results

Most of the motorcyclists reported that they do not wear Hi-Viz gear, primarily because of their general dislike of its appearance. Many participants expressed a strong dislike for Hi-Viz yellow, and some noted that the “look” of Hi-Viz gear does not fit the norms of rider cultures or represent its style. For example, cruiser riders expressed a preference for jeans and black leather jackets. Some motorcyclists suggested that wearing Hi-Viz apparel could lead to ridicule from other riders.

Compared to most of the participants, sport motorcycle operators appeared more willing to use Hi-Viz gear, and several motorcyclists noted that wearing Hi-Viz gear is prevalent in sport motorcycle racing.

Many of the motorcyclists expressed the belief that Hi-Viz gear would not improve safety. For example, some said drivers are too distracted by cell phone use to notice the presence of motorcyclists, with or without Hi-Viz gear. From their perspective, driver distraction is the primary safety problem and risk faced by motorcyclists, not a lack of conspicuity.



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 1200 New Jersey Avenue SE, NPD-320  
 Washington, DC 20590

Several very experienced, confident riders expressed a belief that they do not need to use Hi-Viz gear, as it is their experience that keeps them safe. However, these riders suggested that novice or older riders could benefit from using Hi-Viz gear, as these types of riders are less experienced.

Although most participants did not use Hi-Viz gear, they expressed the belief that low visibility is a safety problem. Many riders had adopted ways to increase their conspicuity, such as the habit of avoiding riding in drivers’ blind spots, or adding lights or loud exhaust pipes to their motorcycle. However, in their opinion, wearing Hi-Viz gear would not add value to the improvements they already made.

In general, the women riders and scooter riders appeared more willing to use Hi-Viz gear than the men.

Other barriers to use are the beliefs that Hi-Viz gear is costly, uncomfortable, and inconvenient. Many participants said they would be more willing to use Hi-Viz if they were more convinced of its safety benefits.

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## How to Order

To order the report, *Motorcyclists’ Attitudes on Using High-Visibility Gear to Improve Conspicuity: Findings From a Focus Group Study*, prepared by Westat, Inc., write to the Office of Behavioral Safety Research, NHTSA, NPD-300, 1200 New Jersey Avenue SE, Washington, DC 20590 or download from [www.nhtsa.gov](http://www.nhtsa.gov).

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